

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1-19 (Cancelled)

Claim 20 (Previously Presented): A sensor device, comprising:

a biosensor comprising a receptor bound on a solid substrate;

a sensor compartment having an interior and an exterior, and enclosing the biosensor, the sensor compartment having a surface allowing external viewing of the biosensor; and

a separation barrier forming at least a portion of the sensor compartment, the separation barrier being selected from the group consisting of a fibril membrane, a microporous membrane and a capillary-pore membrane, the separation barrier having at least one pore allowing fluid communication between the interior and exterior of the sensor compartment.

Claim 21 (Previously Presented): The sensor device of claim 20, wherein the separation barrier separates the interior of the sensor compartment from a primary container.

Claim 22 (Currently Amended): The sensor device of claim 20, wherein the at least one pore which allows fluid communication between the interior and exterior of the sensor compartment is occluded with a responsive material.

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Claims 1-19 (Cancelled)

Claim 20 (Previously Presented): A sensor device, comprising:

a biosensor comprising a receptor bound on a solid substrate;

a sensor compartment having an interior and an exterior, and enclosing the biosensor, the sensor compartment having a surface allowing external viewing of the biosensor; and

a separation barrier forming at least a portion of the sensor compartment, the separation barrier being selected from the group consisting of a fibril membrane, a microporous membrane and a capillary-pore membrane, the separation barrier having at least one pore allowing fluid communication between the interior and exterior of the sensor compartment.

Claim 21 (Previously Presented): The sensor device of claim 20, wherein the separation barrier separates the interior of the sensor compartment from a primary container.

Claim 22 (Currently Amended): The sensor device of claim 20, wherein the at least one pore which allows fluid communication between the interior and exterior of the sensor compartment is occluded with a responsive material.

Claim 23 (Previously Presented): The sensor device of claim 22, wherein the responsive material is selected from the group consisting of cellulose, non-cellulosic non-protein polymers, protein polymers, lipid bilayers, and lipid-containing composites.

Claim 24 (Previously Presented): The sensor device of claim 22, wherein the responsive material exhibits a response selected from the group consisting of eroding, dissolving, and changing three-dimensional form.

Claim 25 (Previously Presented): The sensor device of claim 24, wherein the response results from a change selected from the group consisting of a change in solvent concentration, a change in pH, a change in temperature, bacterial action, endotoxin action, enzymatic action, and contact with water.

Claim 26 (Previously Presented): The sensor device of claim 20, wherein the surface allowing external viewing permits optical sensing of the biosensor.

Claim 27 (Previously Presented): The sensor device of claim 20, wherein the sensor compartment has walls comprised of an opaque material.

Claim 28 (Canceled)

Claim 29 (Previously Presented): The sensor device of claim 20, wherein the biosensor further comprises a bioactive detector molecule and signal material.

Claim 30 (Previously Presented): The sensor device of claim 29, wherein the bioactive detector molecule and signal material are a fluorescent receptor complex.

Claim 31 (Previously Presented): The sensor device of claim 29, wherein the bioactive detector molecule and signal material are a fluorochrome-receptor complex.

Claims 32-35 (Canceled)

Claim 36 (Previously Presented): The sensor device of claim 21, wherein the primary container is closed for analysis.

Claim 37 (Previously Presented): The sensor device of claim 20, wherein the device is capable of aseptic operation.

Claim 38 (Previously Presented): The sensor device of claim 20, wherein the external sensing is remote sensing.

Claim 39 (Withdrawn): A membrane selected from the group consisting of a fibril membrane, a microporous membrane and a capillary-pore membrane, the membrane comprising:

a receptor bound on a solid substrate; and

at least one pore,

wherein the membrane forms a separation barrier and further comprises an interior and exterior of a sensor compartment of a biosensor.

Claim 40 (Withdrawn): The membrane of claim 39, wherein the membrane further comprises a bioactive detector molecule and signal material.

Claim 41 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material are a fluorescent receptor complex.

Claim 42 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material are a fluorochrome-receptor complex.

Claim 43 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material are a combination of a first fluorescent receptor and a second fluorescent receptor, the second receptor emitting detectable light of a unique wavelength on excitation by fluorescent resonance transfer by the first fluorescent receptor.

Claim 44 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material are a combination of a first receptor and a second receptor, the first receptor binding a cell and the second receptor undergoing a detectable spectral change in response to material released by the cell bound to the first receptor.

Claim 45 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material are a combination of two inhibited fluorescent groups linked by an enzymatic cleavage site, and wherein enzymatic action cleaves the enzymatic cleavage site and releases the fluorescent inhibition.

Claim 46 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material are a combination of a first receptor and a second receptor, the first receptor binding a cell capable of releasing an enzyme and the second receptor being an inhibited fluorescent group wherein the enzyme releases the fluorescent inhibition.

Claim 47 (Withdrawn): The membrane of claim 40, wherein the bioactive detector molecule and signal material is linked to the membrane via a carboxyl group.

Claim 48 (New): A sensor device, comprising:

a biosensor comprising a receptor bound on a solid substrate;

a sensor compartment having an interior and an exterior, and enclosing the biosensor, the sensor compartment having a surface allowing external viewing of the biosensor; and

a separation barrier forming at least a portion of the sensor compartment, the separation barrier being selected from the group consisting of a fibril membrane, a microporous membrane and a capillary-pore membrane, the separation barrier having at least one pore allowing fluid communication between the interior and the exterior of the sensor compartment, wherein the biosensor further comprises a detector molecule and signal material wherein the detector molecule and signal material are selected from the group consisting of a) a combination of a first fluorescent receptor and a second fluorescent receptor, the second fluorescent receptor emitting detectable light of a unique wavelength on excitation by fluorescent resonance transfer by the first fluorescent receptor; b) a combination

of a first receptor and a second receptor, the first receptor binding a cell and the second receptor undergoing a detectable spectral change in response to material released by the cell bound to the first receptor; c) a combination of two inhibited fluorescent groups linked by an enzymatic cleavage site, and wherein enzymatic action cleaves the enzymatic cleavage site and releases the fluorescent inhibition; and d) a combination of a first receptor and a second receptor, the first receptor binding a cell capable of releasing an enzyme and the second receptor being an inhibited fluorescent group wherein the enzyme releases the fluorescent inhibition.

Claim 49 (New): A sensor device, comprising:

a biosensor comprising a receptor bound on a solid substrate;

a sensor compartment having an interior and an exterior, and enclosing the biosensor, the sensor compartment having a surface allowing external viewing of the biosensor; and

a separation barrier forming at least a portion of the sensor compartment, the separation barrier being selected from the group consisting of a fibril membrane, a microporous membrane and a capillary-pore membrane, the separation barrier having at least one pore allowing fluid communication between the interior and the exterior of the sensor compartment, wherein the biosensor further comprises a bioactive detector molecule and signal material wherein the bioactive detector molecule and signal material are selected from the group consisting of a) a combination of a first fluorescent receptor and a second fluorescent receptor, the second fluorescent receptor emitting detectable light of a unique wavelength on excitation by fluorescent resonance transfer by the first fluorescent receptor; b) a combination of a first receptor and a second receptor, the first receptor binding a cell and

the second receptor undergoing a detectable spectral change in response to material released by the cell bound to the first receptor; c) a combination of two inhibited fluorescent groups linked by an enzymatic cleavage site, and wherein enzymatic action cleaves the enzymatic cleavage site and releases the fluorescent inhibition; d) a combination of a first receptor and a second receptor, the first receptor binding a cell capable of releasing an enzyme and the second receptor being an inhibited fluorescent group wherein the enzyme releases the fluorescent inhibition; and e) a receptor that binds a material, such that upon binding the material, spectral features of the receptor are altered.